ACKNOWLEDGEMENT

I want to express my profound gratitude for the countless blessings that have allowed me to successfully complete my Ph.D. journey. First and foremost thanks to the **Almighty** whose blessings have illuminated my path and helped me navigate through the complexities of work, study, and personal growth. As I embark on new journeys and endeavours, I pray for the continued guidance and blessings.

Foremost, I sincerely acknowledge Prof. Pragna Parikh for her unflinching leadership and ongoing support during my Ph.D. I consider myself extremely fortunate to have had the opportunity to study under Prof. Parikh's mentoring, and I am grateful beyond words for the information, guidance, and support she has given me. She has constantly pushed me to accomplish the task on time and to achieve the best. My ability to conduct effective research and successfully complete my doctoral studies has greatly benefited from her priceless insights, kind criticism, and intellectual mentoring. My inspiration has always come from her passion for the subject and her effort to create a supportive learning atmosphere. My academic experience has been enhanced by her mentoring, and has also helped me grow personally. My Ph.D. journey wouldn't have been accomplished without guidance and support. Additionally, I would also like to extend my heartfelt appreciation to Mr. Hitesh Parikh for his unwavering support throughout the tenure of my Ph.D. I am also thankful to Mr. Yashesh Parikh and Ms. Vaidehi Parikh for their unwavering support. I am deeply grateful to my guide's family for creating an environment that allowed me to focus on my research and academic goals. Their support has been invaluable, and I am genuinely appreciative of their role in my academic success.

I gratefully thank my co-guide **Dr. Parth Pandya** for their important advice and assistance in my research work. His expertise, mentorship, and dedication have had a big impact on my academic and research activities. Working with my co-guide has been a genuinely enlightening experience, and I have greatly benefited from his thoughts and viewpoints in improving the standard and breadth of my work. His unfailing support, helpful criticism, and academic direction have served as a source of motivation and inspiration.

I would like to extend my sincere thanks to the **Head, Department of Zoology, Prof. Suresh Balakrishnan** for his incredible support and motivation throughout my Ph.D. journey. His guidance and encouragement have been instrumental in my academic and personal growth.

My sincere thanks to the former Head, Department of Zoology, **Prof. P.C. Mankodi, Prof. Dolly Kumar**, and **Prof. Kauresh Vacharjani.** Throughout the time in department, your unwavering support served as a constant source of inspiration. Your leadership within the department has created a nurturing and intellectually stimulating environment that I have been privileged to be a part of. I would also like to thank **Prof. Geeta Padate** for her continuous support, guidance, and motivation throughout my Ph.D. journey.

I am thankful to late **Prof. Vihas Vasu** for his ever motivating and inspirational words throughout my research tenure and also for allowing me to use the Gel doc whenever needed.

My sincere thanks to **Dr. R. V. Devkar** for his constant enthusiasm, motivation towards achieving success, and encouragement towards my research work. I am also thankful to you for allowing me to use Fluorescence microscope whenever needed. I am truly thankful to **Dr. Prakash Pillai, Dr. Hetal Roy**, and **Dr. Gowri Kumari** for imparting immense knowledge and providing constant support and encouragement throughout my Ph.D. journey. As I move forward in my academic and professional endeavours, I carry with me the lessons I've learned under your guidance which has also instilled in me a sense of responsibility and dedication to the field.

I am truly grateful to the **Department of Biochemistry** and **Cell and Molecular Biology** for allowing me to use common instrumentation facilities throughout my study. I am thankful to the **Veterinary and Animal Husbandry College of Anand**, for allowing me to use the **RT-PCR facility** in their research labs.

I would like to take a moment to thank and appreciate **Dr. Bhumi Thakkar**, **Dr. Linta Paulson**, **Dr. Ankur Upadhyay**, **Dr. Hitarth Changani**, **Dr. Bhavika Patel**, and **all my lab seniors** for their ever presence whenever I run into trouble, for their constant support and guidance throughout my Ph.D. journey.

My heartfelt gratitude towards my lab mates for their incredible support and camaraderie provided, throughout my research tenure. I am thankful to **Dr. Ankita Salunke**, who has been a constant source of positivity, inspiration and hard work. She made the lab environment comfortable enough to share space and knowledge. She has always helped me out through challenging research hurdles, or simply navigating the ups and downs of academic life. I would also like to thank **Mr. Pankaj Sharma**, my lab mate as well as a

friend, for assisting me to the field as well as in my lab work. I appreciate your unfailing support and encouragement, and for maintaining a good lab environment. The collaborative spirit that permeates our lab is a testament to the incredible synergy we share as a team.

I would also like appreciate the support of the **Temporary Teaching staff**. Your belief in my potential and your motivating words during challenging times kept me focused and determined to overcome obstacles.

I am also thankful to the non-teaching staff namely Mr. Shailesh, Mr. Hitesh, Mr. Gulab, Mr. Hemant, Shankar uncle, Rajendra bhai, Dilip bhai, and Nazir uncle for their unduly support throughout my research period.

I would like to thank my **Ph.D. colleagues'** for their constant support. I genuinely appreciate the times we've spent brainstorming, troubleshooting, and celebrating each other's milestones, both big and small. Your willingness to share your expertise, lend a helping hand, and offer a listening ear during both the triumphs and setbacks have made this journey far more enriching and enjoyable.

My deepest admiration towards my friends from Department namely **Harshita** Sharma, Bhaval Parmar, Krupal Patel, Dhaval Bhatt, Niketa Maheta, for assisting me to the field, for helping me with documentation, and for their unfailing support throughout my Ph.D. journey. I want to appreciate them for being a constant source of encouragement and for being truly amazing friends. My Ph.D. journey would not have been better without you by my side.

My **Department** has been more than just a workplace; it's been a second home with wonderful individuals like above mentioned who not only showed support, encouragement, and friendship, but have also been a constant source of strength for me. I am grateful and thankful to everyone in the Department.

I would fail in my duty if I do not thank my friends who have also been a part of my Ph.D. journey. My special thanks to **Mithil Trivedi** for his untimely support and ever helping attitude. I appreciate his assistance to the field at times for beetle collection and also for reviewing my thesis. I am also thankful to **Harshita Johari**, **Rahul Ladumor** for accompanying me to the field, **Rudra** and **Rupal Ladumor** for their kind support. I appreciate **Shifa Garasiya** for always being an ear to listen, support me, and for being a wonderful friend. I also appreciate **Hiren Patel** for his support throughout this journey.

The pursuit of a Ph.D. often demands long hours of research, study, and dedication, and the support of family members are immeasurable during this time. I am truly thankful to my father **Mr. Nutan Pandya**, brother **Jash Pandya**, uncles, aunts, and cousins for being my greatest support throughout my journey of research. Their understanding of the commitments and challenges I faced and their willingness to stand by me have been a source of strength and motivation.

I express my deepest gratitude to the funding agency **SHODH-Scheme of High Quality Research**, Government of Gujarat, India, for providing me stipend for two years (June, 2021-July, 2023), to carry out my research work potentially.

I am truly grateful to the **SERB, DST** for providing me the travel grant for presenting my work at the International Conference held at Kuching, Sarwak, Malaysia. I am thankful for the opportunity provided, to attend and present my research work at the 5th International symposium on Insects, 2023, by the Entomological society of Malaysia.

Once again, thank you all and those whose names are missing here for being an essential part of my Ph.D. journey. Your support has been invaluable, and I am profoundly grateful to have had the privilege of working alongside each one of you.

Last but not the least; I am thankful to my late mother **Ms. Amita Pandya** for bestowing her blessings on me. She has been a hope and inspiration to me, to work harder and be successful with everything I do. I am thankful to her for my existence which has allowed me to grow and become a better human being with each passing day.

Nishi Pandya